

Serial No. 09/722,583
Attorney Docket No. 465-758P
Group Art Unit 2823
Page 2

depositing a conductive layer over the substrate;
forming a photoresist pattern on the conductive layer;
etching the conductive layer using the photoresist pattern as a mask to
form a lower electrode;

K1
und.

removing the photoresist using an etching gas that is non-reactive with
respect to the lower electrode, wherein the etching gas is one of H₂O, a mixture
of H₂ and O₂ in which an amount of H₂ is smaller than an amount of O₂, a
mixture H₂O, NH₃, and N₂, a mixture of N₂ and NH₃, a mixture of NH₃ and H₂O,
and a mixture of N₂ and H₂O; and

forming a dielectric film and an upper electrode on a surface of the lower
electrode.

4. (Twice Amended) A method for fabricating a capacitor of a
semiconductor device comprising:

depositing a nitride film and an oxide film over a semiconductor
substrate, the oxide film being deposited on the nitride film by chemical vapor
deposition;

22

sequentially etching the oxide film and the nitride film using a patterned
photoresist as a mask;

forming a conductive region on the semiconductor substrate;

forming an interleaving insulating film having a contact hole therein over
the conductive region;

Serial No. 09/722,583
Attorney Docket No. 465-758P
Group Art Unit 2823
Page 3

forming a contact plug within the contact hole;

forming insulating film patterns on the interleaving insulating film to expose the contact plug and the interleaving insulating film adjacent to the contact plug;

depositing a barrier film and a first conductive layer on the contact plug and the insulating film patterns;

forming a photoresist over the contact plug between the insulating film patterns;

sequentially removing the first conductive layer and the barrier film on the insulating film patterns using the photoresist as a mask, thereby forming a lower electrode and a barrier film in a U-shape in cross-section;

removing the photoresist using an etching gas that is non-reactive with respect to the lower electrode, wherein the etching gas is one of H_2O , a mixture of H_2 and O_2 in which an amount of H_2 is smaller than an amount of O_2 , a mixture H_2O , NH_3 , and N_2 , a mixture of N_2 and NH_3 , a mixture of NH_3 and H_2O , and a mixture of N_2 and H_2O ;

removing the insulating film patterns; and

sequentially forming a dielectric film and an upper electrode on the lower electrode and the barrier film.

Serial No. 09/722,583
Attorney Docket No. 465-758P
Group Art Unit 2823
Page 4

Please **add claims 11 and 12** as follows:

-- **11.** A method for fabricating a capacitor of a semiconductor device comprising:

depositing a nitride film and an oxide film over a substrate, the oxide film being deposited on the nitride film by chemical vapor deposition;

sequentially etching the oxide film and the nitride film using a patterned photoresist as a mask;

depositing a conductive layer over the substrate;

forming a photoresist pattern on the conductive layer;

etching the conductive layer using the photoresist pattern as a mask to form a lower electrode;

removing the photoresist using an etching gas that is non-reactive with respect to the lower electrode; and

forming a dielectric film and an upper electrode on a surface of the lower electrode.

12. A method for fabricating a capacitor of a semiconductor device comprising:

depositing a nitride film and an oxide film over a semiconductor substrate, the oxide film being deposited on the nitride film by chemical vapor deposition;

Serial No. 09/722,583
Attorney Docket No. 465-758P
Group Art Unit 2823
Page 5

sequentially etching the oxide film and the nitride film using a patterned photoresist as a mask;

forming a conductive region on the semiconductor substrate;

forming an interleaving insulating film having a contact hole therein over the conductive region;

forming a contact plug within the contact hole;

forming insulating film patterns on the interleaving insulating film to expose the contact plug and the interleaving insulating film adjacent to the contact plug;

depositing a barrier film and a first conductive layer on the contact plug and the insulating film patterns;

forming a photoresist over the contact plug between the insulating film patterns;

sequentially removing the first conductive layer and the barrier film on the insulating film patterns using the photoresist as a mask, thereby forming a lower electrode and a barrier film in a U-shape in cross-section;

removing the photoresist using an etching gas that is non-reactive with respect to the lower electrode;

removing the insulating film patterns; and

sequentially forming a dielectric film and an upper electrode on the lower electrode and the barrier film. --